

532 Rec'd PCT/PTC 25 AUG 2000

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

4100-116P

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/623024

INTERNATIONAL APPLICATION NO.

PCT/EP99/01055

INTERNATIONAL FILING DATE

February 18, 1999

PRIORITY DATE CLAIMED

February 25, 1998

TITLE OF INVENTION

RADIO DEVICE WITH REMOTE CONTROL

APPLICANT(S) FOR DO/EO/US

ISELT, Peter

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19<sup>th</sup> month from the earliest claimed priority date
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(3)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☒ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.-1449 and International Search Report (PCT/ISA/210), German Search Report and 6 references
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
  - 1.) One (1) sheet of Formal Drawings
  - 2.) One (1) sheet of Translate Drawings

533 Rec'd PCT/PTO 25 AUG 2000

U.S. APPLICATION NO (if known, see 37 CFR 1.5)

INTERNATIONAL APPLICATION NO

ATTORNEY'S DOCKET NUMBER

09/623024

PCT/EP99/01055

4100-116P

17. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5):**

Neither international preliminary examination fee (37 CFR 1.482)  
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO  
and International Search Report not prepared by the EPO or JPO. . . . . \$970.00

International preliminary examination fee (37 CFR 1.482) not paid to  
USPTO but International Search Report prepared by the EPO or JPO . . . . . \$840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO  
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. . . . . \$690.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
but all claims did not satisfy provisions of PCT Article 33(1)-(4) . . . . . \$670.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
and all claims satisfied provisions of PCT Article 33(1)-(4). . . . . \$96.00

**ENTER APPROPRIATE BASIC FEE AMOUNT =**

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☒ 30  
months from the earliest claimed priority date (37 CFR 1.492(e)).

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	6 - 20 =	0	X \$18.00	\$	0
Independent Claims	1 - 3 =	0	X \$78.00	\$	0
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			None	+ \$260.00	\$ 0
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$	970.00
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).				\$	0
<b>SUBTOTAL =</b>				\$	970.00
Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	0
<b>TOTAL NATIONAL FEE =</b>				\$	970.00
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property +				\$	0
<b>TOTAL FEES ENCLOSED =</b>				\$	970.00
				Amount to be: refunded	\$
				charged	\$

a. ☒ A check in the amount of \$ 970.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account. No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 02-2448.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

Send all correspondence to:

**Birch, Stewart, Kolasch & Birch, LLP** or Customer No. 2292  
P.O. Box 747  
Falls Church, VA 22040-0747  
(703)205-8000

SIGNATURE

TIM R. WYCKOFF  
NAME

#46, 175 (TRW)  
REGISTRATION NUMBER

/cqc August 25, 2000

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: ISELT, Peter  
Int'l. Appl. No.: PCT/EP99/01055  
Appl. No.: New Group:  
Filed: August 25, 2000 Examiner:  
For: RADIO DEVICE WITH REMOTE CONTROL

PRELIMINARY AMENDMENT

**BOX PATENT APPLICATION**

Assistant Commissioner for Patents  
Washington, DC 20231

August 25, 2000

Sir:

The following Preliminary Amendments and Remarks are respectfully submitted in connection with the above-identified application.

AMENDMENTS

IN THE SPECIFICATION:

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/EP99/01055 which has an International filing date of February 18, 1999, which designated the United States of America.--

IN THE ABSTRACT:

Please add the Abstract as follows:

--The invention relates to a radio device with a plurality of adjustable transmitting and receiving functions. According to the invention, the operating functions can be remotely controlled and remotely monitored via a remote control device. To this end,

the remote control device is connected via a radio rely to an interface of the radio device to which additional protective measure for securing a fault-free transmission of the operating functions and information are assigned. In addition, a device is provided on the remote control device for the input and output of the information to be transmitted with said radio device.--

**IN THE CLAIMS:**

Please amend the claims as follows:

**Claim 2:** Line 1, change "Radio" to --The radio--; and  
change "Claim" to --claim--

**Claim 3:** Line 1, change "Radio" to --The radio--; and  
change "Claim 1 or 2" to --claim 1--

**Claim 4:** Line 1, change "Radio" to --The radio--; and  
change "one of the preceding claims" to  
--claim 1--

**Claim 5:** Line 1, change "Radio" to --The radio--; and  
change "one of the preceding claims" to  
--claim 1--

**Claim 6:** Line 1, change "Radio" to --The radio--; and  
change "one of the preceding claims" to  
--claim 1--

**REMARKS**

The specification has been amended to provide a cross-reference to the previously filed International Application. The

Docket No. 4100-116P

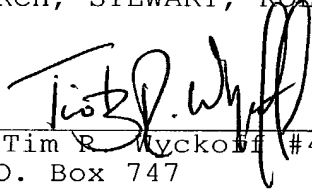
claims have also been amended to delete multiple dependents and to place the application into better form for examination. Entry of the present amendment and favorable action on the above-identified application are respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

  
Tim R. Wyckoff #46,175  
P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

TRW/cqc  
4100-116P

(Rev. 04/19/2000)

P 20 481

Radio Device with Remote Control

This invention relates to a radio device with a plurality of adjustable transmitting and receiving functions suitable for transmitting information in a complex wireless transmission system, e.g., in the shortwave range.

It is known that stationary radio devices or radio devices installed in motor vehicles can be operated as shortwave transmitting and receiving devices by using remote control devices positioned locally a few meters away or at a greater distance, whereby the status of these radio devices can be monitored and the transmissions/reception information transmitted by these remote control devices. Therefore, a suitable interface for a cable connection between a radio device and a remote control device is provided on the radio device.

In wireless transmission systems which operate with such remote control devices, there is an increasing demand for free mobility of the user in space or over land without being tied to the radio device by cables or the like. This demand is encountered in particular with highly mobile applications such tactical military campaigns or other spontaneous actions such as rescue and emergency actions.

In the field of telephones, it is known that with so-called cordless telephones, for example, a hand-held device can be connected by wireless link to a mobile base unit (German Patent No. 4,237,395). Not only speech information but also program parameters for the base unit can be transmitted over these wireless links. Thus, for example, control commands can be transmitted to an electrical appliance such as a washing machine, or status information can be obtained from such an electric appliance by providing the appliance with such a transmitting and receiving device connected to a central telephone system (European Patent No. 800,303). However, this arrangement, which was developed for telephone systems, is unable to meet the high demands

made of radio devices having a plurality of complex operating functions, especially since information must also be transmitted with the radio devices at the same time.

Therefore, the object of the present invention is to provide a system with which the above-mentioned demand for free mobility of the user can also be met with such wireless transmission systems where high demands are made of the operating functions.

On the basis of a radio device according to the definition of the species of the main claim, this object is achieved by the characterizing features of that claim. Advantageous refinements are derived from the subordinate claims.

According to this invention, a known wireless link is used for transmitting the operating functions as well as transmitting information between a remote control device and the actual radio device, but this wireless link also has appropriate protective measures to ensure error-free transmission. Thus, such a radio device which has a plurality of complex operating functions and is used for information transmission in a complex wireless transmission system such as a shortwave transmission system can also be remotely controlled and remotely monitored by the user, while the user can nevertheless move freely in space or over land.

With the system according to this invention, the mobile remote control device is connected directly to the radio device instead of being connected by way of an intermediate central telephone exchange, as is the case with the known cordless telephone systems (European Patent No. 800,303), so this system is also extremely reliable in operation and cannot be paralyzed by failure of the central exchange.

The additional protective measures in wireless transmission ensure that unauthorized persons cannot intervene in the operating and information transmission system. The measure according to this invention is suitable for transmitting speech as well as other information, possibly even in a time-division multiplex method. With the radio device according to this invention, the actual complex devices for setting the transmission and reception functions and for establishing the

connection remain in the actual radio device, and only the operating and monitoring commands together with the speech information or data information are exchanged over the remote control wireless link.

With respect to the choice of the transmission frequency, the power, the coding (if used) and the data rate, the remote control wireless link is designed to permit secure transmission over a distance of several hundred meters, so that the security of the transmission is not significantly inferior to that required for the system as a whole. This is achieved, for example, by using a suitable power ...

There follows the original description, pages 3 and 4.



This invention is explained in greater detail below with reference to a schematic diagram based on one embodiment.

The figure shows a conventional stationary or semi-mobile radio device 1 which has a plurality of complex functions and is suitable for transmitting information in a complex wireless transmission system, e.g., a shortwave transmission system. An interface 2 for a wireless connection over a remote control wireless link 3 is provided on radio device 1; by means of which radio device 1 has a wireless connection to a locally positioned remote control device over this wireless link. The transmission frequency of this wireless link 3 is adjusted to the operational scenario and may be selected between a shortwave connection and an optical light (infrared) connection. Remote control device 4 is battery powered, has a display field for the operating functions of radio device 1 and a corresponding operating field with which the user can set the individual operating functions of the radio device. In addition, a status display of the radio device in the display field is also possible. In addition, an interface 5 for input and output of the information to be transmitted over the radio device is also provided, said information being, for example, speech or other digital data. Thus, not only is the locally positioned radio device 1 operated and monitored over wireless link 3 but also the actual transmission of information to hand-held device 4 take place over this wireless link.

Additional protective measures to ensure error-free transmission of operating data and information data are also provided on wireless link 3. Wireless link 3 is equipped with suitable channel coding, for example, and data transmission is handled according to a known transmission protocol. In addition, measures for encoding and decoding the transmitted data may be provided to prevent unauthorized persons from penetrating the transmission link. In addition, measures to protect against outside interference may be provided, e.g., through a suitable signal spread (use of a suitable method of sudden frequency change or other coding measures).

If radio device 1 already has a remote control device 6 which is connected by a cable 7 to the

actual radio device 1, a suitable interface 2 may also be provided on a corresponding remote control device 6, so that a wireless remote control link 3 to this locally positioned remote control device 4 can be established, and again in this case, input and output of information to be transmitted over radio device 1 may also be provided by way of an interface 5. Thus, not only remote control data and remote monitoring data but also information can be transmitted over wireless link 3.

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New Claims

1. Radio device (1) on which a plurality of transmitting and receiving functions can be adjusted over a remote control interface (2), for transmitting information in a complex wireless transmission system, in particular by shortwave, characterized in that the remote control interface (2) of the radio device (1) is connected by a wireless link (3) directly to a mobile remote control device (4) by which the operating functions of the radio device (1) can be remotely controlled, and the operating states of the radio device (1) can be remotely monitored, a device (5) for input and output of the information to be transmitted with the radio device (1) is provided on the remote control device (4); and the wireless link (3) has additional protective measures to ensure error-free transmission of the operating functions and information.
2. Radio device according to Claim 1, characterized in that the wireless link (3) has channel coding suitable for error-free transmission.
3. Radio device according to Claim 1 or 2, characterized in that transmission of the operating function data and information data on the wireless link (3) takes place according to a transmission protocol that provides data security.
4. Radio device according to one of the preceding claims, characterized in that the operating function data and information data transmitted on the wireless link (3) is encoded to prevent interception.

5. Radio device according to one of the preceding claims, connected by a cable (7) to a stationary or semi-mobile remote control device (6) and having a remote control interface (2), characterized in that the mobile remote control device (4) is connected by a wireless link (3) to this interface (2) of the stationary or semi-mobile remote control device (6), and a device (5) for input and output of the information to be transmitted is also provided on the mobile remote control device (4).

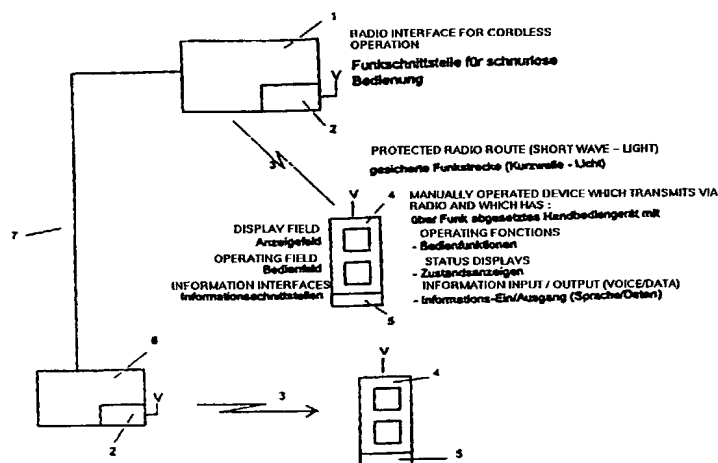
6. Radio device according to one of the preceding claims, characterized in that the mobile remote control device (4) is designed as a battery-powered hand-held device which permits free mobility of the user.

**PCT**  
 WELTORGANISATION FÜR GEISTIGES EIGENTUM  
 Internationales Büro  
 INTERNATIONALE ANMELDUNG VERÖFFENTLICHT NACH DEM VERTRAG ÜBER DIE  
 INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT)



<b>(51) Internationale Patentklassifikation <sup>6</sup> :</b> <b>H04M 1/72</b>	<b>A1</b>	<b>(11) Internationale Veröffentlichungsnummer:</b> <b>WO 99/44350</b>  <b>(43) Internationales Veröffentlichungsdatum:</b> 2. September 1999 (02.09.99)
<b>(21) Internationales Aktenzeichen:</b> PCT/EP99/01055 <b>(22) Internationales Anmeldedatum:</b> 18. Februar 1999 (18.02.99)  <b>(30) Prioritätsdaten:</b> 198 07 928.1      25. Februar 1998 (25.02.98)      DE  <b>(71) Anmelder (für alle Bestimmungsstaaten ausser US):</b> ROHDE & SCHWARZ GMBH & CO. KG [DE/DE]; Mühlhofstrasse 15, D-81671 München (DE).  <b>(72) Erfinder; und</b> <b>(75) Erfinder/Anmelder (nur für US):</b> ISELT, Peter [DE/DE]; Lina-Hänle-Strasse 5, D-80997 München (DE).  <b>(74) Anwalt:</b> GRAF, Walter; Mitscherlich & Partner, Sonnenstrasse 33, D-80331 München (DE).		<b>(81) Bestimmungsstaaten:</b> US, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Veröffentlicht</b> <i>Mit internationalem Recherchenbericht.</i> <i>Vor Ablauf der für Änderungen der Ansprüche zugelassenen Frist; Veröffentlichung wird wiederholt falls Änderungen eintreffen.</i>

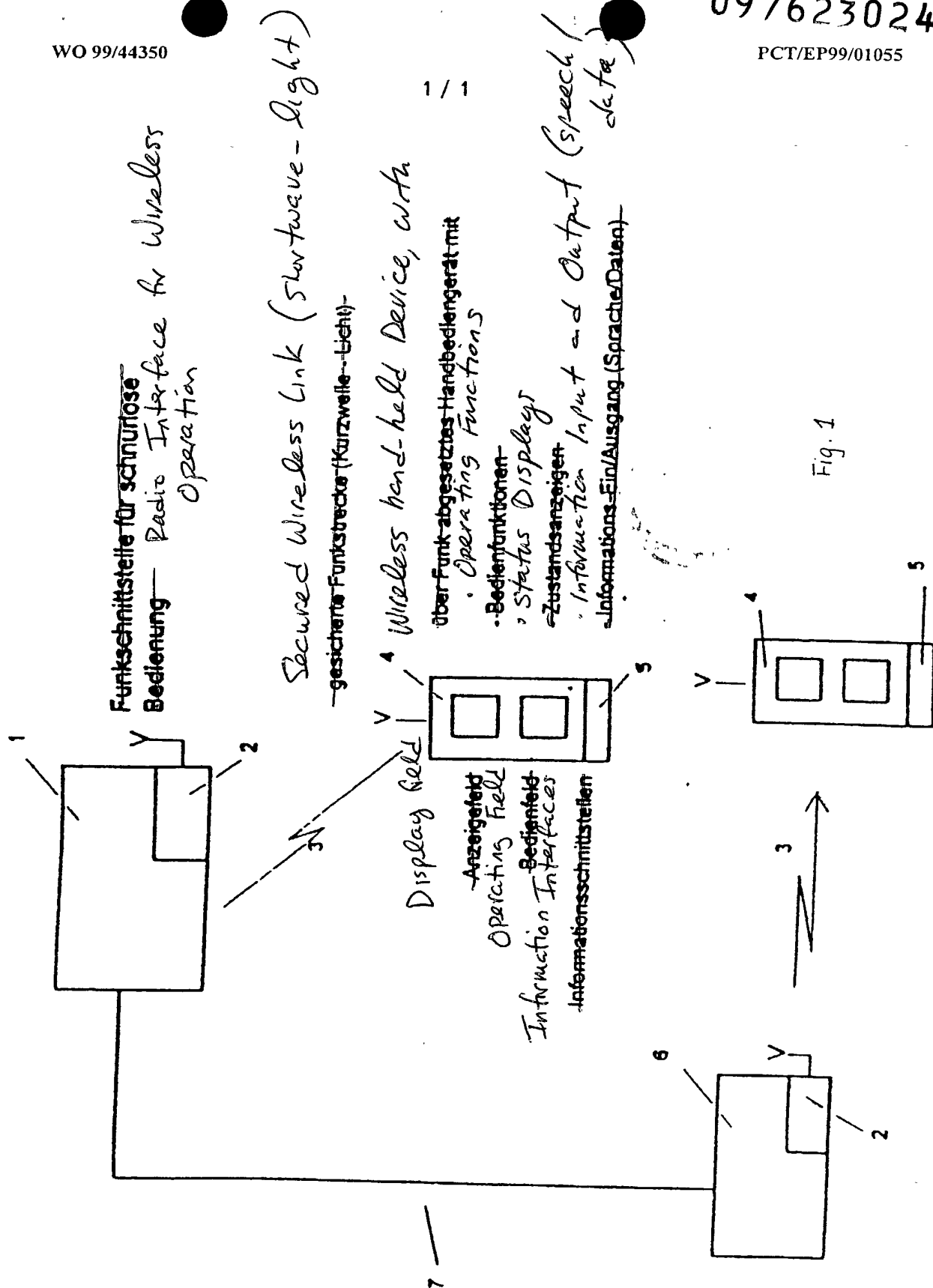
**(54) Title:** RADIO DEVICE WITH REMOTE CONTROL  
**(54) Bezeichnung:** FUNKGERÄT MIT FERNBEDIENUNG



**(57) Abstract**

The invention relates to a radio device with a plurality of adjustable transmitting and receiving functions. According to the invention, the operating functions can be remotely controlled and remotely monitored via a remote control device. To this end, the remote control device is connected via a radio relay to an interface of the radio device to which additional protective measures for securing a fault-free transmission of the operating functions and information are assigned. In addition, a device is provided on the remote control device for the input and output of the information to be transmitted with said radio device.

SCANNED, # 12



**BIRCH, STEWART, KOLASCH & BIRCH, LLP**P.O. Box 747 • Falls Church, Virginia 22040-0747  
Telephone: (703) 205-8000 • Facsimile: (703) 205-8050PLEASE NOTE:  
YOU MUST  
COMPLETE THE  
FOLLOWING**COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT AND DESIGN APPLICATIONS**

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title:

RADIO DEVICE WITH REMOTE CONTROLFill in Appropriate  
Information -  
For Use Without  
Specification  
Attached:

the specification of which is attached hereto. If not attached hereto,

the specification was filed on \_\_\_\_\_ as  
United States Application Number \_\_\_\_\_;  
and amended on August 25, 2000 \_\_\_\_\_ (if applicable) and/or  
the specification was filed on February 18, 1999 \_\_\_\_\_ as PCT  
International Application Number PCT/EP99/01055 \_\_\_\_\_; and was  
amended under PCT Article 19 on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

**Prior Foreign Application(s)****Priority Claimed**Insert Priority  
Information:  
(if appropriate)

<u>198 07 928 1</u> (Number)	<u>Germany</u> (Country)	<u>February 25, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications(s) listed below.

Insert Provisional  
Application(s):  
(if any)

_____ (Application Number)	_____ (Filing Date)
_____ (Application Number)	_____ (Filing Date)

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Insert Requested  
Information:  
(if appropriate)

Country	Application Number	Date of Filing (Month/Day/Year)
_____	_____	_____
_____	_____	_____

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Insert Prior U.S.  
Application(s):  
(if any)

_____ (Application Number)	_____ (Filing Date)	_____ (Status - patented, pending, abandoned)
_____ (Application Number)	_____ (Filing Date)	_____ (Status - patented, pending, abandoned)

(Reg. No. 19,382)  
(Reg. No. 28,380)  
(Reg. No. 29,680)  
(Reg. No. 28,977)  
(Reg. No. 32,644)  
(Reg. No. 32,181)  
(Reg. No. 34,313)  
(Reg. No. 35,094)

**Customer No. 2292**Page 2 of 2  
(Rev. 04/08/2000)

GIVEN NAME/FAMILY NAME Peter ISELT		INVENTOR'S SIGNATURE <i>Peter Helt</i>		DATE* 26. Sep. 00
Residence (City, State & Country) Muenchen GERMANY DEX			CITIZENSHIP German	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country) Line-Haenle-Strasse 5, D-80997, Muenchen GERMANY				
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE		DATE*
Residence (City, State & Country)			CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)				
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE		DATE*
Residence (City, State & Country)			CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)				
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE		DATE*
Residence (City, State & Country)			CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)				

\*DATE OF SIGNATURE